

# Environtario

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## BLUE BOX PLUS! PROJECT SHOWS RECYCLING COSTS CAN BE CUT

**A**dding more types of materials to the Blue Box program and source separating at the curb can reduce the costs of recycling reveals a report released by the Ministry of the Environment. The report on the Blue Box Plus! Quinte Regional Recycling demonstration project also shows that only minor modifications were needed to trucks and facilities to accommodate the new materials collected for recycling.

Sponsored by the Ministry of the Environment, OMMRI and the Centre and South Hastings Waste Management Board, the Blue Box Plus! project was launched in September 1990 with 15 municipalities and a population of 95,000 participating in the study. This project is part of Ontario's waste reduction action plan to divert the amount of waste going to landfill sites by at least 50 per cent by the year 2000.

The plan consists of strong regulatory measures to reduce at source the flow of valuable resources going to disposal and includes financial and technical systems to divert these materials from landfills. A marketing strategy will help ensure a demand for these materials, and education programs will provide Ontarians with the information they need to make responsible choices to reduce waste.

The project was implemented to explore the technical and economic aspects of collecting, processing and marketing new blue box materials through the expansion of an existing blue box program. The new

materials included mixed plastics, corrugated cardboard and boxboard.

Over a twelve month period, different methods of collecting and processing these materials were tested and new markets were developed. More than 33,000 blue boxes were distributed: 20,000

for city curbside, 9,000 for rural curbside and 4,000 for rural depot.

The collection of existing materials, the expansion to new recyclable materials, the increased number of municipalities that joined the project and the 86 per cent participation rate of the residents contributed to the success of Quinte's Blue Box Plus! program. The costs of approximately \$25 per household per year are in line with other blue box programs collecting fewer materials.

One of Quinte's success stories is the development of markets for post-consumer boxboard.

Companies using boxboard have agreed to accept 10,000 tons of boxboard collected through the Blue Box Plus! project. Studies to further develop markets are being done in conjunction with the Paper and Paperboard Packaging Environmental Council (PPEC), an association of 116 companies, to explore the possibility of using Quinte boxboard for the production of food board, building materials, ethanol and compost.

The Blue Box Plus! project was a one-year demonstration program, launched in September 1990. The success of the first year translated into a new extended demonstration program, Blue Box 2000 launched in November 1991. Blue Box 2000 will demonstrate how a traditional Blue Box program can be expanded to its maximum potential. Combined with composting, waste reduction and recycling, the goal of Blue Box 2000 is a minimum 50 per cent diversion of the household waste stream by the end of the year 1992.

Copies of the report titled Blue Box Plus! Quinte Regional Recycling Demonstration Program, PIBS 2068E, are available through the ministry's Public Information Centre at 135 St. Clair Ave. W., Toronto, Ontario, M4V 1P5, (416) 323-4321 or 1-800-565-4923.



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# MINISTER OUTLINES FUTURE ENVIRONMENTAL MEASURES TO AMO

OCTOBER 19, 1992

Environment Minister Ruth Grier, addressing the Association of Municipalities of Ontario (AMO) at Burlington, told members that Ontario's Waste Reduction Action Plan (WRAP) is now a reality. "It's progressive, it's working and it's already producing results."

Counting off the successes achieved to date, the minister highlighted the important roles played by the Blue Box 2000 Program and the backyard composting projects which have brought communities across Ontario within reach of the government's target of a 50 per cent diversion of landfill by the year 2000.

Mrs. Grier told AMO representatives that since they last met she had released a second initiative paper, dealing with waste management planning, for public comment. At the same time, the Ministry of Municipal Affairs issued a document on municipal powers regarding waste management. She thanked AMO staff who have worked closely with both ministries on these initiatives and the minister promised to return in the next few months with new proposals for discussion.

She then went on to outline some of the features of the new program for waste system planning. These include:

- Setting up systems to provide clear "one window/one voice" delivery from MOE regional offices to provide better communication and better service.
- Providing clear provincial direction: a draft policy document will be released for comment in the new year along with The Guide to Municipal Waste Planning.
- Accelerating 3Rs planning and implementation.
- Encouraging development of a 3Rs system before planning for disposal sites.
- Providing equitable funding assistance – e.g. enhanced funding for northern waste management planning.
- Supplementing \$2.9 million allocation for ongoing and new planning studies.



## Streamlining Environmental Approval

➤ Proceeding with major Environmental Assessment reforms to strengthen the efficiency and effectiveness of the EA process. Since 1976, thousands of projects have fallen under the Act. Last year MOE staff completed 18 government reviews of full EA projects. More than in the previous four years combined.

- Giving clear written guidelines for proponents and the public in the EA process.
- Cutting government review period of individual EA documents by two thirds and reducing the entire EA process by half.
- Working with the Environmental Assessment Board to reduce the average length of hearings, and using negotiation to minimize the need for hearings.
- Applying the same principle of efficiency to areas other than waste management including the review and approvals process.

## Faster Certificates of Approval

- Reducing existing turnaround time for approvals in half, and expediting the process by providing pre-application consultation, guidance manuals and simplified application forms.
- Cutting the red tape and taking a hard look at the bottom line in waste management.

## Plan: Fair and Working

"We want to ensure that business and industries inside and outside our boundaries, institutions, consumers and everyone involved in generating and handling waste materials all carry their fair share of the financial costs and benefits implicit in waste reduction," Mrs. Grier told AMO members. "There is no doubt that the Waste Reduction Action Plan is well under way, that it is fair, that it is working and producing positive results."

# MODEL BACKYARD COMPOSTING PROJECTS ON TARGET FOR 50 PERCENT WASTE REDUCTION

Ontario's Waste Reduction Action Plan aims to divert 50 per cent of the waste going to landfill by the year 2000. The Ministry of the Environment is giving its full support to any community with over 5,000 residents to establish Model Backyard Composting Projects which, like the Blue Box Program, tackles the problem of domestic waste head on.

## 5,000 Composters For Brockville

OCTOBER 20, 1992

Brockville is one of nine municipalities across the province that have launched or are planning model composting programs.

MOE has granted \$259,325 to the City of Brockville to distribute 5,000 home composters to residents. When the model backyard composting project is successfully

completed, all of Brockville's 6,490 single family homes will be composting.

## Demo Composting Project Launched

SEPTEMBER 25, 1992

The Township of West Garafraxa has received an MOE grant of \$43,730 to establish a demonstration model backyard composting project.

Drew Blackwell, Assistant Deputy Minister, Waste Reduction Office of the Ministry of the Environment said at the opening ceremonies that he was delighted that the township has agreed to be a partner with the province on this waste reduction project.

A total of 927 composters will be distributed door-to-door. Residents will receive initial composting information and continuing support through follow-up visits by special township staff.

## MOE Backs Barrie in War on Waste

OCTOBER 15, 1992

The Ministry of the Environment has granted \$283,833 to the City of Barrie to distribute an additional 6,000 home composters to residents. Over the past two years, Barrie has distributed 6,000 composters as part of its model backyard composting project which, when completed, should involve 67 per cent of Barrie's 18,000 single family homes in composting wastes.

The grant will fund two thirds of the costs of providing the composters, 75 per cent of the eligible promotion and advertising costs and 100 per cent of temporary labour costs. It is estimated that as much as 4,000 tonnes of organic material could be diverted from disposal annually through Barrie's backyard composting initiative.



# PUBLIC TO SCRUTINIZE MATERIALS MANAGEMENT AND LAKEFILL GUIDELINES

SEPTEMBER 9, 1992

**E**nvironment Minister Ruth Grier has asked the Advisory Committee of Environmental Standards (ACES) to hold public consultation on a proposed materials management policy and guidelines for lakefill quality.

The materials management policy is intended to manage soil, rock and similar excess materials which cannot be dealt with through the 3Rs including: excavated soil and rock, foundry sand, coal ash and old concrete, bricks, masonry and dredged

material. The proposed policy sets out analytical requirements for categorizing materials, as well as the approvals required for handling them.

Lakefill refers to any material which is disposed of in a body of

water. Under the lakefill guidelines, which were announced June 15, 1992 by Environment Minister Ruth Grier, materials contaminated beyond the levels set will be classed as unsuitable for lakefilling. Fill which meets the guidelines will be divided into two categories – confined fill and unconfined fill.

Confined fill may be used for lakefilling projects, provided it is used in a structure, such as a dike, which will prevent the fill from coming into contact with open water.

Unconfined fill, which may be placed directly into the water, must first pass a series of stringent environmental tests.

The public consultation begins September 10, 1992 and continues until January 8, 1993. For further information, please contact the Advisory Committee on Environmental Standards at 135 St. Clair Avenue West, Toronto, Ontario M4V 1P6. Telephone (416) 314-9265.

## 1990 DISCHARGE REPORTS SHOW SLIGHT IMPROVEMENT – BUT INDUSTRY MUST DO MORE

AUGUST 27, 1992

**M**unicipal sewage treatment plants made more progress than Ontario's industries in meeting provincial standards in 1990 over the previous year according to two reports recently released by MOE.

Seventy-six per cent of the 385 municipal sewage plants assessed met provincial policy guidelines in

1990 – a six per cent increase over 1989, but the percentage of industries meeting those requirements, the report claims, remained virtually unchanged at about 45 per cent.

### Charges and Convictions

MOE's Investigations and Enforcement Branch investigated 57 violations at 26 company plants

and 8 violations at municipal sewage treatment plants.

Two companies were prosecuted and convicted; six charges are still pending and two investigations ended with no further action. In the case of the remaining 47 violations, the companies involved took measures to improve effluent treatment and no further action was required.

Only two charges were laid against municipal sewage treatment plants, in both cases the Regional Municipality of Sudbury. Both charges were dismissed, although MOE is appealing one of the dismissals.

Both municipalities and industries in Ontario will have to show further improvement if they are to meet the ministry's goal to eliminate toxic discharge to Ontario's lakes and rivers.

## MOE RECOGNIZES BELL'S "PIONEER SERVICE" IN WASTE REDUCTION

NOVEMBER 16, 1992

**A** special Ministry of the Environment certificate was accepted by Mr. Stu Verge on behalf of Bell Ontario. The award came as a tribute to the company's pioneering approach to waste reduction.

Environment Minister Ruth Grier told Bell employees at their company Zero Waste Event that the Ontario Government intends to reduce the amount of waste going to disposal by at least 25 per cent in 1992 and by at least 50 per cent by the year 2000 – a big change in a society that has been the world's biggest creator of solid waste.

Bell Ontario is at the leading

edge of waste reduction in the work place, the minister remarked, having reduced solid waste by more than 80 per cent in eight buildings. The company has a well-developed and effective Zero Waste Program, based on environmental awareness and employee involvement.

Mrs. Grier took "great pride" in presenting a commemorative plaque to Ms. Cherie Bruce of Bell's Zero Waste Team in recognition of their success.

### Setting an Example

Bell Ontario has been generous, Mrs. Grier said, in sharing details of

its Zero Waste Program as a model for other companies. By giving priority to waste reduction, recyclability and recycled content in its purchase decisions, Bell is providing economic incentives for suppliers to take on greater environmental responsibility.

The core of Bell's success, Mrs. Grier said, has been the use of waste audits and effective action plans, which MOE will be regulating early in 1993 to move others toward the same targets achieved by Bell.

For copies of the *Report on the 1990 Industrial Direct Discharges in Ontario* (PIBS 1957), *Report on the 1990 Discharges from Municipal Sewage Treatment Plants in Ontario* (PIBS 1958) and *The Evaluation of Acute and Chronic Toxicity in Ontario Sewage Treatment Plant Effluents* (PIBS 1932E), please contact the Ministry of the Environment's Public Information Centre at 135 St. Clair Avenue West, Toronto, Ontario M4V 1P5. (416) 323-4321 or call toll free 1-800-565-4923.

# NEW POLLUTION PREVENTION PLEDGE PROGRAM GIVES INDUSTRY INITIATIVE

**F**or the past 20 years, we have relied on what has been called the Command-and-Control approach – using laws and regulations, control orders and abatement programs, backed by enforcement and prosecution. In essence, we have relied on intervention, not prevention.” Environment Minister Ruth Grier told members of industry at the Technology Transfer Conference, held in Toronto November 5, 1992. The pollution prevention message ran throughout her address, as can be seen in the following highlights.

## Prevention the Cure

Environmental science now provides us with a better understanding of the real challenges we face. To meet these challenges much of our work is now aimed at providing and encouraging individuals, institutions and industries to make changes in their basic operations to prevent pollution before it is created.

## A Pledge for Prevention

Last April, I announced the establishment of a Pollution Prevention Office which will encourage all stakeholders to make pollution prevention the primary means of achieving their environmental priorities.

Today I am happy to announce the Pollution Prevention Pledge Program, which is the first major initiative undertaken by our Pollution Prevention Office.

This program will emphasize the prominence of prevention and self-responsibility in the achievement of environmental protection goals. It will recognize the leadership role that all industries in Ontario should play in preventing pollution.

## Volunteering for Duty

The Pollution Prevention Pledge Program is a voluntary industrial program that will help us achieve major reductions in toxic releases using industrial innovation and pollution prevention. The program challenges industry to collectively achieve a 50 per cent reduction in the release of certain chemicals and hazardous wastes by the year 1995 and a 90 per cent reduction by the year 2000.

The program is founded on a series of progressive voluntary commitments that will target approximately 70 persistent toxic chemicals, groups of chemicals and classes of hazardous wastes which are released to the environment and are of environmental concern. This program will also accept proposals from companies for reduction of any other pollutant released into Ontario's environment.

## Levels of Commitment

The Pollution Prevention Pledge Program will be based on challenges and recognition. It will acknowledge progressive levels of commitment.

**First** – the registration/planning level. At this stage, companies will register their intent to join the program and develop a pollution plan, or make a toxic reduction use commitment, within one year.

**Second** – the reduction commitment level. Companies will share with the ministry a specific reduction commitment with a set time frame for the reduced release of specific chemicals.

**Third** – the reduction achievement level. Companies acknowledged at

this level will have achieved significant reductions in the release of toxic chemicals and hazardous wastes. To reach this level, facilities must have achieved a 20 per cent reduction in release of toxic substances or attained 50 per cent of their total reduction commitment. **Fourth** – the pollution prevention achievement level. Companies which have achieved significant reductions in the release of pollutants by avoiding the creation of pollution will receive individual ministry recognition through special awards and the right to use our new pollution prevention symbol.

**“Progress which meets our present needs without compromising the ability of future generations to meet their needs – that is the challenge.”**

## Getting There Together

Developing a positive relationship has been a recent goal of both industry and my ministry. We want to build on this relationship and recognize the industries that take up this challenge.

Some industrial sectors have already begun to embrace pollution prevention principles by changing

*Continued on next page*

# ENVIRONMENTAL APPEAL BOARD NEW APPOINTMENTS

OCTOBER 27, 1992

**S**even new part-time members have been appointed to the Environmental Appeal Board after a search conducted by Chair, John Swaiger that resulted in over 100 applications.

Names from applications to the Public Appointments Secretariat of the Premier's office, from approaches made directly to the Board office, and through newspaper advertisements. Fifteen shortlisted applicants underwent oral and written examinations before the final selection was made.

The seven new members will take up their responsibilities immediately, hearing appeals by companies and private citizens of orders and certificates issued under

Ontario's environmental laws. The Environmental Appeal Board now has 21 members holding hearings province-wide.

## Group of Seven

The new members appointed to the Environmental Appeal Board are: **John Buschek** of Ottawa, a chemist who has worked for both industry and environmental organizations.

**John Jackson** of Kitchener, known for his leadership role in hazardous waste and solid waste management work with Ontario environmental groups.

**Peter Kohl** of Guelph, a retired newspaper editor/executive and co-founder of a citizen's group formed to clean up the Lake Memphramagog watershed on the Quebec-U.S. Border.

**Lesley Lovett Doust** of Windsor, an associate professor of biology with particular interest in Great Lakes issues.

**Carolynne Siller** of Mississauga, co-founder and president of the Mississauga Citizen's Environmental Protection Association and an environmental consultant.

**Robert Strang** of Shelburne, a chemical engineer with a background in industry, now self-employed specializing in environmental and occupational health and safety management.

**Cheryl Waldrum** of Strathroy, a lawyer and law professor specializing in constitutional law.

With the addition of these seven new members, the Environmental Appeal Board now has 21 members holding hearings all across Ontario.



*Industry - from previous page*  
their operations and incorporating new technologies.

Northern Telecom is one of Ontario's important multinational companies. Over the past three years, Northern Telecom has eliminated the use of CFC-113. This has prevented more than 8,000 tonnes of CFCs from being released and adding to the destruction of the earth's ozone layer. Northern Telecom has invested one million dollars in this project but will save four million dollars during the next decade.

Another Ontario company that has shown leadership in pollution prevention and proved that all sizes of industry can participate is Essex Specialty Products. This company has accomplished a remarkable performance in reducing its use of toxic chemicals. In developing activities to prevent the generation of more than 35,000 litres of hazardous waste a year, it has saved more than \$160,000 annually in reduced cost of raw materials and disposal charges. I would like to see more proactive programs such as those implemented at Northern Telecom and Essex Specialty Products.

### Green Strategy for Industry

In conjunction with the Ministries of Energy and Industry, Trade and Technology, we have developed a Green Industry Strategy. Our goal is simple: to assemble the forces of Ontario's industrial know-how, to network our scientific institutions, and to tap the potential of market forces incentives to produce the new economy that will create the jobs of the future.

To further promote Ontario industry, we are creating an Environment Business Development Unit in the near future. Its services will include developing and sharing information on technology, providing business support, assisting technology transfer and application, facilitating financial assistance and fostering Ontario and international market development.

We want to work with you towards a great goal. I hope you will take up our challenge by making a pledge towards pollution prevention and reclaim the environment.

## CYANIDE FROM GOLD MINE BRINGS DOWN \$50,000 FINE

OCTOBER 13, 1992

Cyanide and heavy metals discharged in effluents flowing into Larder Lake have cost Deak Resources Corporation a \$50,000 fine from a Kirkland Lake court.

In at least seven of the ten months between December 1990 and September 1991, total cyanide and heavy metals in effluent from the company's Kerr/Addison gold

mine exceeded limits set down in its Certificate of Approval. From December 1990 to April 1991, cyanide concentrations were four to five times those limits.

Deak Resources Corporation was fined under section 16(1) of the Ontario Water Resources Act, which relates to discharging a material that may impair water quality.

## ONTARIO HYDRO PAYS FOR PCBs

SEPTEMBER 9, 1992

Ontario Hydro fell foul of the Environmental Protection Act (EPA) by illegally storing PCBs on a site that had not been approved by the Ministry of the Environment. A Dryden court has slapped the company with a \$3,500 fine.

In 1990, Ontario Hydro began construction of a new PCB storage site at its Dryden office, but failed to apply for a permit under Regulation 11/82 of the EPA, dealing with PCBs.

On June 14, 1991, a drum containing 26.5 litres of oil with PCBs at 320 parts per million was moved onto the new site. A few days later, an MOE inspection revealed that the site had not been approved by the ministry.

The PCB oil drum was handled safely and an approval was later issued for the site.



## P & L TIRE MANAGER MUST PAY

SEPTEMBER 2, 1992

Non-compliance with a Director's Order has cost Dominic Musitano, of P & L Tire Recycling, a total of \$5,000 in fines from a Hamilton Court. The July 1990 order required Mr. Musitano and others to undertake work to reduce fire risks on the site containing approximately 600,000 used tires.

Mr. Musitano was fined \$500 per count on five counts and \$2,500 on one count under section 146 (1a) of the Environmental Protection Act.

## NOVACOR FINED \$40,000 FOR ACID VAPOR RELEASE

OCTOBER 19, 1992

On or about July 3, 1991, Ted Allen Henry, a chemist with Novacor Chemicals (Canada) Ltd., attempted to neutralize a quantity of aluminum chloride waste. Mr. Henry used his own method of neutralizing the mixture, which resulted in a reaction causing a cloud of hydrochloric acid vapor to discharge into the environment.

The incident prompted an evacuation of more than two hundred workers at the neighbouring Polysar plant. Workers complained of headaches, impaired breathing and sore throats.

Novacor was fined \$40,000 and Mr. Henry was fined \$2,000 by a Sarnia court under section 12(1) of the Environmental Protection Act.



# U.S. PUTS NEW ONTARIO TECHNOLOGY TO THE TEST

OCTOBER 15, 1992

**M**unicipalities and companies across Ontario are keeping a close watch on results from an innovative process developed by a Rockwood, Ontario company. The process, which is now undergoing tests in Bay City, Michigan, is supported in part by a \$561,000 grant from Environment Ontario.

Eco Logic International Inc. is testing the process that destroys hazardous waste, including materials contaminated by PCBs and PAHs, both of which are suspected carcinogens. The Michigan landfill site contains PCBs at high concentrations.

## Destroying Waste Without Incineration

Eco Logic's innovative technology uses hydrogen heated to high temperatures which then reacts with organic compounds to produce methane and other light hydrocarbons. The technology means that PCBs, PAHs and other types of haz-

ardous wastes may be destroyed without using incineration.

In a previous pilot project, the company successfully tested the process on contaminated sediment dredged from the bottom of Hamilton Harbour. The tests, supported through a \$311,800 grant from the Environmental Technologies Program, yielded very encouraging results.

## Testing Ground

The Michigan project includes three different runs to test the efficiency

of the new process: water with 4,000 parts per million (ppm) PCBs, soil with 1,000 ppm PCBs and oil with 20 per cent PCBs will be used in tests. Total cost of the Michigan project is \$1.6 million. MOE has granted the company up to \$250,000 through the two-year-old Environmental Technologies Program which offers financial help to Ontario companies and organizations for developing and testing technology which protects and restores the environment, and which has commercial potential.

The tests are sponsored by the U.S. Environmental Protection Agency (EPA), Bay City, Environment Ontario and Environment Canada. U.S. EPA assumed all pre-test costs.

## Ontario Will Reap Dividends

Future sites in Ontario include: the Sherman Mine cleanup in Temagami, Atomic Energy at Chalk River, the orphan site at Rednerville, and PCB contaminated sites at Hamilton Harbour, where the new process was first tested.



# DO-IT-YOURSELF USED OIL COLLECTION PROGRAM LAUNCHED

SEPTEMBER 21, 1992

**T**he first in a series of several hundred used oil depots to be set up across the province were opened in Toronto at a Canadian Tire Store at Sheppard Avenue East and McCowan Avenue. 580 more depots came on line as part of the government's ongoing 3Rs initiatives.

## Communities Benefit

The used oil collection program is the result of an agreement between MOE, the Canadian Petroleum Products Institute (CPPI), independent manufacturers, blenders and sellers of lubricating oils. The voluntary program is being phased in to provide convenient local depots to consumers in every community with more than 5,000 residents. By next summer, new MOE regulations will require full participation in this program by all lubricant sellers across Ontario.

## Millions of Litres Wasted

The program stresses re-refining as the preferred option for the used oil collected through the program.

The depots target used oil that is sold to the DIY market - 41 million litres a year in Ontario. About 30 million litres per year of this oil generated by do-it-yourself motorists has been dumped into sewers or thrown in the garbage. Until now, only 10-20 per cent of this oil has been recovered.

## 3Rs Made Easy

Waste oil depots are among the first collection facilities to take advantage of a new streamlined approach to government approvals which simplifies startup of a new waste reduction, reuse or recycling operation without compromising environmental protection.

# HOME COMPOSTING & ENVIRONMENTAL EDUCATION - WASTE REDUCTION WINNERS

SEPTEMBER 30, 1992

**W**aste Reduction Week (Sept 27 - Oct 9, 1992) in Ontario gave a big boost to home composting and saw the introduction of a new environmental education initiative developed by the Ministry of the Environment in partnership with the Ministry of Education.

## Composting Halves Waste

MOE has committed more than \$1.1 million to date toward model home composting projects in seven municipalities. Activities include intensive promotion and distribution efforts, public workshops and pilot projects. Householders who

use a backyard composter and the Blue Box can cut their garbage disposal by as much as one half.

Studies have shown that about 30 per cent of Ontario's residential waste is organic. A household using a backyard composter can divert as much as 250 kilograms of residential waste per year away from disposal. One in every four Ontario households (about one million homes) already uses backyard composting. MOE has contributed more than \$12 million towards the purchase of 482,000 composters.

## Kids Taught Garbage

Another highlight of Waste Reduction Week was the introduction of a teacher's kit for educating

students in grades seven through nine about waste management issues.

Younger children in kindergarten through grade six have been given their own TAG (Teaching About Garbage) kits, which introduce waste management topics to a variety of study areas, including science, mathematics, visual arts, music and literature.

"The TAG kit gives teachers an effective tool for showing young people that they can make a difference in helping to protect the environment through waste reduction," Environment Minister Ruth Grier told students.

# REMEDIAL OPTIONS COULD HELP HAMILTON HARBOUR

A report released by the Great Lakes Section of MOE's Water Resources Branch provides useful information to assist in the development of a remedial action plan (RAP) for Hamilton Harbour, one of 17 Canadian "Areas of Concern" on the Great Lakes identified in an earlier 1985 report to the International Joint Commission (IJC).

The new report presents the results of chronic sublethal toxicity tests conducted on sediment exposed to different oxygen regimes during the ice-free period. It finds that sediment from regions within Hamilton Harbour is highly contaminated with metals. Most sediment elicited sublethal and/or lethal responses in bioassay organisms, and metal bioavailability proved greater in sediment collected in the fall as compared to sediment col-

lected in the spring. Tissues analysis in test organisms implicates trace metals and sediment oxygen demand as contributing to sediment toxicity.

Remedial options aimed at improving the oxygen regime of the harbour should result in improvements in the invertebrate community directly, by providing a suitable oxygen regime for organisms less tolerant of temporal anoxia, are indirectly by decreasing metal bioavailability.

The report, *The Influence of the Oxygen Regime in the Water Column on the Toxicity of Hamilton Harbour Sediment* (PIBS 2118), is available from the Ministry of the Environment's Public Information Centre at 135 St. Clair Avenue West, Toronto, Ontario M4V 1P5. (416) 323-4321 or call toll free 1-800-565-4923.

## FIRMS RESPOND TO SURVEY

Bioremediation is becoming an increasingly popular form of cost effective remedial technology that can be used to detoxify contaminated soils and waters.

An exhaustive survey of the Canadian, U.S. and International private sectors and research institutions was undertaken to determine current uses of bioremediation. Thirty Canadian organizations, identified as potential bioremediation users, were invited to respond to a questionnaire. Of the ten responding organizations, nine are involved in bioremediation, five add allochthonous microorganisms and three supply them.

Of the seventy-five commercial inoculants identified, 31% are for use in biodegradation of aliphatics (petroleum hydrocarbons), less than 2% of inoculants were suggested for use in biodegradation of halogenated polyaromatics such as PCBs. Only 6% of inoculants

are suggested for pesticides (polycyclics) while 9% were recommended in biodegradation of halogenated aliphatics such as trichlorethene and other solvents.

When it comes to applications, 72% of the inoculants reviewed are recommended for use in on-applications such as bioreactors and composting, while 79% of the inoculants reviewed are suggested for in situ bioremediation (soil and groundwater clean up, landfarming).



### TECH NOTES

The report, *A Survey of Microbial Inoculants For Bioremediation And Identification of Information Requirements Suitable for The Feasibility Evaluation and Validation of Bioremediation* (PIBS 2152), is available from the Ministry of the Environment's Public Information Centre at 135 St. Clair Avenue West, Toronto, Ontario M4V 1P5. (416) 323-4321 or call toll free 1-800-565-4923.

## Environario

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## FAX BACK READER SURVEY

**Environario Highlights is one year old –** and we need you to tell us how we are doing. Please take a few moments to fill out this survey. The results of the survey will be published in the March issue. Fax your responses to editor Jane Hargraff at (416) 323-4683.

**How often do you read the following?  
Check the appropriate box.**

	Never	Sometimes	Always
Waste Management.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Waste Reduction.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Investments in the Future .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Water.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Air.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Policy Talk.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
People Talk .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Legal Eye .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tech Notes.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Periodic Publication Report .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Circle the areas which you feel should get more coverage in Environario Highlights.**

Water	Air
Policy Talk	People Talk
Legal Eye	Tech Notes
Waste Management	Waste Reduction
Investments in the Future	Pollution Prevention
Periodic Publication Report	

**Circle the area you or your company/organization represents:**

Federal Government	Provincial Government
Municipal Government	Interest Group
Commercial	Institutional
Individual	Industry

**Thank you for taking the time to complete this survey.**



# PERIODIC PUBLICATION REPORT

The following is a selection of publications recently released by the Ministry of the Environment.

To obtain copies of these publications, please write to: Environment Ontario, Public Information Centre, 135 St. Clair Ave. West, Toronto, Ont. M4V 1P5

Telephone: (416) 323-4321 (Toronto and Outside Ontario)

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Fax: (416) 323-4564

Please allow 2 weeks for delivery. Postage for packages under 2.5 kg will be paid by Environment Ontario.

You can visit the Public Information Centre at 135 St. Clair Ave. West, (at Avenue Rd.), Monday to Friday, from 9:00 am to 4:30 pm (holidays are excluded)

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Telephone: (416) 326-5300 (Toronto and outside Ontario)

1-800-668-9938 Toll-free, rest of Ontario

2023 E SP Official Launch of Used Oil Depot Network Sept 21, 1992

2025 E SP Ontario Round Table on Environment and Economy "Restructuring for Sustainability" Sept 22, 1992

2040 E SP Waste Reduction — It's Working Oct 8, 1992

2045 E SP The Road to Green Leadership Oct 15, 1992

2046 E SP To the Standing Committee on Estimates Oct 14, 1992

2049 E SP To the County and Regional Section of the Association of Municipalities of Ontario Oct 19, 1992

1719 E04 GP Proving Ground Pollution Prevention-The Promise of Improved Environmental Protection (October 1992)\* Oct 1, 1992

1720 F01 GP Les nouvelles du globe Vol 2 No 1 Autumn — Ah le bon vieux Temps.. avec Enviro & Enva Oct 10, 1992

1866 E04 GP Environario Highlights Vol 1 No 4\* Sept 1, 1992

2139 E GP 100 Ways to Watch your Waste Line\* Sept 24, 1992

2141 E GP Ontario Round Table on Environment and Economy Restructuring for Sustainability: Highlights\* Sept 22, 1992

2143 E GP Ontario Round table on Environment and Economy Restructuring for Sustainability Sept 22, 1992

2181 E GP Managing Wastes: A Guide to Citizens' Involvement (2nd edition) Oct 1, 1992

2134 E IS Background: Amendment to Regulation 309: Municipal Waste Incineration in Ontario\* Sept 11, 1992

2135 E IS The Case Against Municipal Waste Incineration\* Sept 11, 1992

2168 E PG Guides for Applying for Certificates of Approval-Six Guides in Package Sept 8, 1992

1970 E SR 1990 Drinking Water Surveillance Program South Peel Lakeview Oct 16, 1992

1973-2008 SR Drinking Water Surveillance Program Reports. For Locations throughout Ontario call MOE's Public Information Centre to Oct 16, 1992

2085 E SR Phyto Soil and Vegetation Lead Assessment Surveys Vicinity Highway 401 Toronto 1972/1979/1990 ARB016-92Phyto Oct 2, 1992

2105 E SR Pesticide Container Recycling Facility Oct 21, 1992

2106 E SR 1990 Air Quality Data Summary Regional Municipality of Niagara Oct 8, 1992

2107 E SR 1990 Air Quality Data Summary Regional Municipality of Hamilton-Wentworth Oct 8, 1992

2108 E SR Air Quality Northwestern Ontario Annual Report 1991 Sept 21, 1992

2109 P SR PCDD/PCDF Sampling program ambient air concentration data listing 1988-1990 Oct 5, 1992

2110 P SR PCDD/PCDF Sampling program ambient air concentration data listing Oct 5, 1992

2111 E SR Regional Municipality of Waterloo and Counties of Wellington and Brant Oct 5, 1992

2117 E SR Waste Wood Recycling by R T Recycling Technology Inc Oct 2, 1992

2118 E SR Influence of the oxygen regime in the water column on the toxicity of Hamilton Harbour sediment Oct 21, 1992

2119 E SR Influence of hydrologic fluctuations and peat oxa on the phosphorus and nitrogen dynamics of conifer swamp Oct 5, 1992

2120 E SR Relative magnitude of phosphorus sources for small oligotrophic lakes in Ontario Oct 21, 1992

2144 E SR Ontario Round Table on Environment and Economy Sectoral Task Force Report: Agriculture and Food Sept 22, 1992

2145 E SR Ontario Round Table On Environment and Economy Sectoral Task Force: Energy Sept 22, 1992

2146 E SR Ontario Round Table On Environment and Economy Sectoral Task Force: Manufacturing Sept 22, 1992

2147 E SR Ontario Round Table On Environment and Economy Sectoral Task Force Report: Minerals Sept 22, 1992

2148 E SR Ontario Round Table on Environment and Economy Sectoral Task Force Report: Transportation Sept 22, 1992

2149 E SR Ontario Round Table On Environment and Economy Sectoral Task Force Report: Urban Development and Economy Sept 22, 1992

2151 E SR Air Quality Nanticoke 1991 Oct 8, 1992

2152 E SR Survey of microbial inoculants and identification of information requirements suitable for the feasibility evaluation Oct 23, 1992

2155 E SR Global search for BAT (Best Available Technology) options applicable to inorganic chemical sector plants Oct 21, 1992

2157 E SR Remediation technologies for contaminated soils Oct 21, 1992

2164 E SR Performance and cost evaluation of best available technology options for the Ontario inorganic sector plants Oct 21, 1992

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2170 E SR Phyto section investigation vicinity of Laidlaw Environmental Services Ltd (Tricil) Corunna 1988 and 1990 Oct 22, 1992

2171 S SR Phyto assessment investigation vicinity of Welco Precision Weights 563 N Hamilton 1991 ARB068-92Phyto Oct 22, 1992

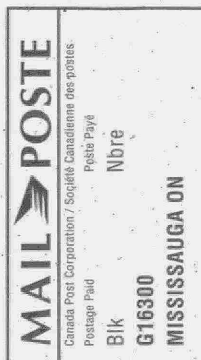
2172 E SR Phyto investigation vicinity Hamilton Brick, Hamilton Sept 9 1991 ARB017-92Phyto Oct 22, 1992

2173 E SR Toxic deposition monitoring network data listing for organo chlorine pesticides and PCBs in Air and Precipitation Oct 23, 1992

2175 E SR Drought and acidification of a minerotrophic conifer swamp on the Precambrian Shield, Canada Oct 22, 1992

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2177 E SR Background Document for the Ontario Farm Groundwater Quality survey Oct 19, 1992



Legend: "2023E" Public Information Bank System (PIBS) number; "DP" = Discussion Paper; "SP" = Speech; "NR" = News Release; "ST" = Statement; "GP" = General Publication; "IS" = Information Sheet; "PG" = Policy & Guidelines; "SR" = Scientific Report; "PO" = Poster; "Official Launch...": title of publication; "Sept 21, 1992", date of release

\* Also available in French